Worlds of Possibilities!
Resident Research: Stimulating a Spirit of Inquiry
William Cairney, PhD
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Which!!?

Jupiter, Saturn, reach for the stars... or come down to earth!
Presentation Objectives:

- Conference attendees will be able to:
  - List obstacles to research commonly perceived by medical students and residents
  - Demystify “research” in the eyes of medical students and residents
  - Map a pathway to a “culture of inquiry” for medical students and residents
What is Research?

- Systematic Investigation of a subject, a problem, or a phenomenon
- Adding new material to the body of knowledge in one’s field
Field-Specific Definitions

- Humanities
- Social Sciences
- Engineering Disciplines
- Natural Sciences (including biomedicine)
What kinds of studies are possible for me?

- Description of a phenomenon or problem
- Way of *dealing with* a problem (methods paper, Continuing Quality Improvement, etc.)
- Retrospective Analysis
- Clinical Trials
- Case Studies
- Controlled Experimentation
Practical Suggestions

Select an area of lifetime interest

Select something you can build on

Select something in which you already have some background

Select something that will enable you to expand your skills (lifelong learning)
Important questions to ask (yourself!)

- What will be the nature of my research?
- What resources and facilities do I have at my disposal?
- What is my level of expertise in using the resources and facilities?
Personal Goals

- Personal enrichment
- To develop and enjoy the process of inquiry (systematic investigation)
If only...

I had more formal training in research
“Research and development! My goodness!”
“To hear all these large words, you would think that the mind of a man of science must be constituted differently from that of his fellow men; but if you will not be frightened by terms, you will discover that you are quite wrong, and that all of these terrible apparatus are being used by yourselves every day and every hour of your lives.”
Does the size of the container make any difference in the melting rate of ice?

HYPOTHESIS: We think ice melts faster in the big container.
Does the size of the container make any difference in the melting rate of ice?

**HYPOTHESIS**: We think ice melts faster in the big container.

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**Conclusion**: We can’t tell yet because one was a metal can and one was a plastic bowl.
Does it matter if the size of the container is different?

Hypothesis: I think the the two bowls will have a tie.

Conclusion: It **does** matter if the size of the container is different. The **BIG** bowl won!
So... going back to practical steps

Select something you find interesting
- Have you ever asked a question about a clinical situation?

Select something you can build on
- Could you start it now and develop it over time?

Select something in which you already have some background
- Are you deeper in medical knowledge in some area?

Select a potential lifelong learning area
Practical steps (cont.)

- Identify a mentor (expert in the area; faculty member with whom you would like to work)

- Get into the medical literature
  - Your general area of inquiry may have already been addressed, or...
  - Gaps may exist. Maybe you could fill one.
Practical Steps (cont.)

- Ask the type of question that addresses the “gap”

Types of Questions:

  - Descriptive question
    - My observation: In my rural practice there appears to be a lot of Type II diabetics. Based on my previous clinical experience, I think I am seeing this.
    - Question: What is the incidence of Type II diabetes in this practice?
    - Secondary Question: Has the incidence increased over “x” time interval?
Types of Research Questions:

Relationship Question

My observation: In my practice, people who take OTC glucosamine for joint “maintenance” appear to take less NSAIDS for relief of discomfort.

Question: Is there a relationship between taking glucosamine and perception of joint pain among my patients?
Practical Steps (cont.)

Types of Research Questions:

Comparison Question

My observation: I think my patients who take OTC glucosamine for joint “maintenance” appear to have better pain control than patients on OTC Ibuprofen.

Question: Does regular dosing with glucosamine alone achieve better pain or discomfort management than Ibuprofen alone?
Questions (yours) about questions?